Revised June 2026

Technical Data Sheet

Hiflex Construction+

MS Polymer-Based Hybrid Sealant/Adhesive.

Description:

HI-FLEX CONSTRUCTION+ is a high-performance, single-component, high-build elastomeric joint sealant based on advanced Hybrid MS Polymer technology and enhanced with Adheseal's Easy Tool Low-Mess formulation. It is a neutral-cure, low-modulus sealant offering high movement capability, excellent UV resistance, and long-term weathering performance in a wide range of climatic conditions.

HI-FLEX CONSTRUCTION+ provides excellent adhesion to most common construction substrates without the need for priming under normal conditions. The cured sealant exhibits high durability, outstanding flexibility, and resistance to gassing, helping to minimise bubbling and ensuring reliable performance in high-humidity environments.

With movement accommodation of up to ±50% of the original joint width, HI-FLEX CONSTRUCTION+ is particularly suited to movement joints, perimeter sealing, and window perimeter applications in fenestration systems. The sealant is easy to apply and tool, curing to form a permanently elastic, weather-resistant, and dust-resistant seal capable of accommodating long-term movement and vibration.

Suitable for use in construction, mechanical engineering, shipbuilding, vehicle manufacturing, and general industrial sealing applications where high-performance joint movement capability and durable adhesion are required.

Uses:

- Hi-Flex Construction+ is designed to seal mechanically fixed joints that are found in fenestration details.
- Expansion joints in precast / tilt-up panels
- Sealing and finishing external wall & cladding joints such as modern facade panels
- Adhesive for lightweight components
- Adheres to most common construction materials: metal, wood, fibreglass and concrete
- Acoustic ceiling tiles
- Seam sealing & Bolted lap joints
- Sealing of joints in prefabricated buildings or concrete panels
- Aluminium & Display sign fabrication
- Sealing materials of different thermal exposure coefficients
- Bonding and sealing automotive and marine manufacturing applications.

Benefits:

- High Build
- Adheseal Easy Tool Low Mess Formula
- Outstanding primer-less adhesion on non-porous substrates
- Movement capability up to ±50 %
- Non-bleeding / non-staining
- No isocyanates, solvents or acids
- Paintable with acrylic, oil, and rubber-based paints (confirm adhesion; non-flexible paint may crack)
- Excellent UV and weathering resistance
- User-friendly, easy gunning and tooling
- Non-corrosive
- Proven long-term durability and resilient.
- Ready to use – single pack.
- Non-toxic, low VOC meets “green star” environmental criteria.
- Compatible and exceptional adhesion with all common building materials: cementitious, brick, ceramics, glass, metals, wood, epoxy, polyester and acrylic resin substrates
- High permanent flexibility
- Resists mould & mildew in hot and humid environments
- Maintains a waterproof flexible joint.
- Low odour

Noncorrosive to most surfaces, including galvanised/zinc-coated steel and concrete.

Hi-Flex Construction+ Sealant/Adhesive - TDS

Acceptable Substrates:

- Masonry, Concrete, Brick
- Metal (except lead & copper)
- Timber
- Plastics
- Stone
- Painted surfaces
- Rubber
- Fibreglass
- Porcelain
- Aluminium
- Powder coat
- Waterproof membranes.

Before use, a preliminary adhesion test is suggested.

For a more comprehensive list, see Primer Selection Chart.

Limitations:.

Adheseal Hi-Flex Construction + is NOT suitable for use in the following applications:

- Not suitable for long-term water immersion.
- Not suitable for internal swimming pool applications. Avoid exposure to high levels of chlorine.
- Totally confined spaces; as the sealant requires atmospheric humidity to cure, it will not cure where it does not have access to atmospheric humidity.
- Aquariums
- Adhering mirrors (Hi-Power/MS609 can be used - test first)
- Structural glazing (N-80 or N-60 glazing silicone)
- All stone (we recommend the completion of a stain testing program before using any sealant on stone) - S100 is recommended for marble, granite (after stain test)
- Sealant may discolour copper & brass.
- Do not expose the sealant to materials containing, cleaning agents, solvents and alcohol that may affect or discolour the sealant, particularly during product curing.
- Not to be used on bituminous, natural rubber, EPDM rubber surfaces or in conjunction with any compound that might leach oils, plasticisers or solvents.
- Avoid applying when moisture-vapour-transmission is emanating from the substrate, and if air-entrapment can occur, as this may cause bubbling.

Application:

Surface preparation:

All surfaces must be structurally sound, stable, dry, clean, and free of dust, loose, flaking, friable material and free from oils, grease, form release agents, curing compounds, and any other surface contamination that may hinder adhesion. Substrate must be free from surface water and continual dampness. Concrete must be allowed to cure for at least 28 days. Failure to do so may result in mould growth, poor adhesion and subsequent delamination. Use the two-wipe process for impervious substrates. Ensure the cloths are clean and moistened with a suitable cleaner/solvent such as Acetone or 100% White Spirits and changed frequently. To achieve a neater finish and to avoid getting excessive sealant on the tiles or stone, mask joint edges.

Priming: Due to the high bond strength of Adheseal sealants, adhesion is normally achieved without priming on most substrates. However, for optimal adhesion and critical high-performance applications and highly stressed joints, if priming or surface preparation is being considered, review the following.

Non-porous substrates: Aluminium, waterproof membranes, anodised aluminium, stainless steel, PVC, galvanised steel, powder-coated metals or glazed tiles; slightly roughen the surface with a fine abrasive pad. Clean and pre-treat using Adheseal 50A surface prep applied with a clean cloth. Once primed, allow no less than 30 minutes and no longer than 2 hours before applying the sealant/adhesive. For metals, such as copper, brass and titanium-zinc and plastics such as PVC, an adhesion test is advised.

Porous substrates: Concrete, aerated concrete and cement-based renders, mortars and bricks: prime surface using Everflex Supaprime applied by brush. Once primed, allow no less than 30 minutes and no longer than 2 hours before applying the sealant/adhesive. For more detailed advice and instructions, contact Adheseal Technical Services.

Note: primers are adhesion promoters and not an alternative to poor preparation/cleaning of the joint surfaces.

Primers also improve the long-term adhesion performance of the sealed joint. Avoid excessive application of primer as this can cause puddles at the base of the joint.

An adhesion test is always recommended; refer to the Adheseal primer selection chart.

Hi-Flex Construction+ Sealant/Adhesive - TDS

Sealant Joint Design:

Where possible, the sealant should be at a 2:1 ratio (width:depth), Diagrams A & C. For internal joints, the width and the depth of the joint should be a minimum of 5mm, and for external joints, 10mm. Maximum joint width is 30mm and depth 15mm. For joints greater than 10mm deep, a backing rod should be used. Use a backing rod 25% larger than the joint width to control the depth of the joint where required. The sealant should only be fixed to two surfaces to allow movement. Hence, on flat joints, use a polyethylene tape or release agent to prevent a 3-sided adhesion of the sealant, Diagram B.

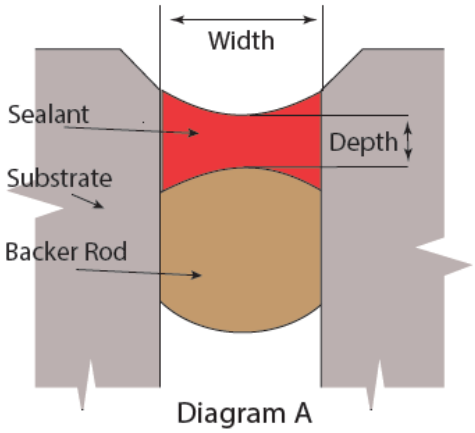


Diagram A

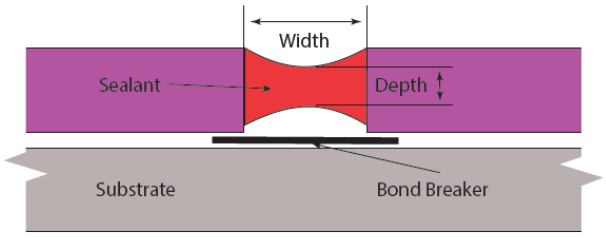
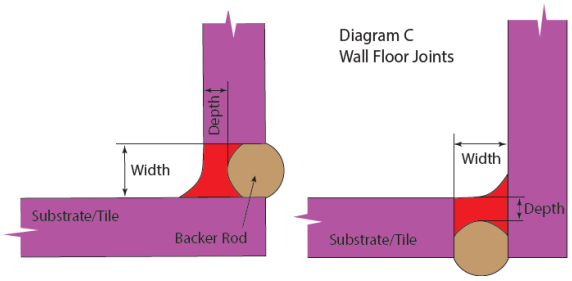


Diagram B



Width	Depth
5-10mm	As the width min 5mm
10mm	5-8mm
15mm	7-10mm
20mm	10mm
25mm	12mm

HI-FLEX CONSTRUCTION+ Installation:

Apply at a temperature between 5°C and 35 °C.

To apply HI-FLEX CONSTRUCTION+ as a sealant: Cut the nozzle at a 45º angle to the desired thickness. Cut the opening in the Foil Sausage. Insert the Foil Sausage into the caulking gun and fix the nozzle. Hold the gun at a 45º angle with the nozzle in contact with both sides of the joint. Apply by pushing sealant ahead of the nozzle, thus ensuring sealant is being pushed firmly into place, in a steady, continuous motion, ensuring good contact with both sides of the joint to achieve optimum adhesion.

To apply HI-FLEX CONSTRUCTION+ as an adhesive: cut the nozzle at a 90º angle to the width of the desired bead, then cut a wedge in the nozzle twice the height of the width of the bead. Cut an opening in the foil sausage. Insert the foil sausage and nozzle into the caulking gun. Hold the gun at a 90º angle with the nozzle flat on the surface. Dispense the sealant following the nozzle, thus ensuring the sealant is standing in place, in a steady, continuous triangular bead. Bring the two surfaces together, compressing the triangular bead to no less than 2mm, ensuring good contact with both sides of the joint to achieve the required adhesion. Diagram D.

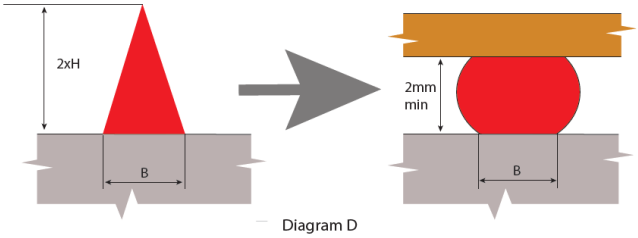


Diagram D

Tool off with a moistened spatula to finish the joint smoothly before the skin forms, approximately 15 minutes. While the sealant is still wet, clean off any excess. If joint edges have been masked, remove tape whilst the sealant is still wet. If the sealant has dried on the surface, clean with white spirit solvent to soften the sealant, then scrape off with a blade. The incompatibility of some substrates may cause discolouration of the sealant, poor sealant adhesion or long-term degradation of the sealant. Always carry out compatibility tests where contact with potentially incompatible materials may occur.

Hi-Flex Construction+ Sealant/Adhesive - TDS

Coverage:

Coverage will vary according to joint width and depth, as well as the type and method of application. The figures below can be used as a guide for:

Adheseal Sealant Calculator			
Joint Size mm	M per ctg	M Per ssg	M per Lt
6 X 6	8.3	16.7	27.78
10 X 6	5.0	10.0	16.67
10 X 10	3.0	6.0	10.00
12 X 12	2.1	4.2	6.94
15 X 8	2.5	5.0	8.33
15 X 15	1.3	2.7	4.44
20 X 10	1.5	3.0	5.00
20 X 20	0.8	1.5	2.50
25 X 12	1.0	2.0	3.33

Triangular Joint Beads			
Joint Size mm	M per ctg	M Per ssg	M per Lt
6 X 6	17	33	56
10 X 10	6	12	20
10 X 15	4	8	13
10 X 20	3	6	10
20 X 20	2	3	5

Adheseal Adhesive Calculator			
Bead Diameter mm	M per ctg	M Per ssg	M per Lt
4	23.9	47.7	79.58
5	15.3	30.6	50.93
6	10.6	21.2	35.37
7	7.8	15.6	25.98

Adheseal Adhesive Calculator for Sheet Flooring			
6mm bead @ 450mm centres			
sheet size m	ctg per sheet	ssg per sheet	Lt per Sheet
3.6 x 0.8	0.6	0.3	0.18
2.7 x 0.6	0.3	0.2	0.10
2.4 x 1.2	0.6	0.3	0.18
1.8 x 0.9	0.3	0.2	0.10

Cure Time:

Allow approximately 10 minutes skin time, cure time 3mm per 24 hours from surfaces exposed to the atmosphere @25dg & 50% humidity. Please note that all cure times vary depending on atmospheric conditions and the porosity of the substrate

Physical Properties	
Type of product	Hybrid MS Polymer
Curing system	Moisture
Cure Time	2mm / 24Hours
Density (specific gravity)	1.48±0.05
Shore A Hardness	29 after 14 days
Joint Movement Capability	+/- 50%
Lap Shear Strength (ASTM C961)	0.65 Mpa
Elongation to break ISO 37	>600%
Modulus Elongation (ASTM D412)	0.41 MPa @ 100%
Application temperature	+5°C to +40°C
Service Temp	-40ºC to +100ºC
Working Time	25m @ 23ºC & 50% RH
Skinning Time	15m @ 23ºC & 50% RH
%Volatile by Volume	<4%
Shelf life	12 months in original packaging
Storage: Cool Dry between	10ºC and 35ºC
UV Resistance 500h	Good
Chemical Resistance	Excellent to water, detergent solutions, Moderate diluted acids & alkalis, petrol & oil for short periods.
Class (ASTM C920)	Class 50
Colour	Grey, Black & White
Packaging	600ml Sausages

Colours:

White (9003) HIFLEXCONPLUSWH/SSG
Grey (7047) HIFLEXCONPLUSGR/SSG
Black (9011) HIFLEXCONPLUSBL/SSG
Number in brackets indicates closest RAL colour.

Clean Up:

While the product is still wet, tools and spills can be cleaned with Xylene. The cured product can be removed by mechanical means.
For cleaning skin, use Adheseal Hand Wipes.

Packaging:

600 ml Foil Sausage, in cartons of 20.
Note: Before application, refer to all relevant TDS's and SDS's detailed product specifications & application instructions.

Adheseal B.A.T. Program: (Bond Adhesion Testing) Program.

For over 15 years, Adheseal has offered a service in which a program has been established to help eliminate potential site problems by pre-testing Adheseal sealants and adhesives with most building materials to which they are applied.

This service is available for projects where pre-installation testing of our products will help determine the best application methodology to achieve optimal adhesion. Contact your Adheseal representative for further information.

Specification: The information contained in this TDS is typical but does not constitute a full specification, as conditions and specific requirements may vary from project to project. The instructions should be considered as a minimum requirement. The applicator or contractor must use their skill, knowledge, and experience to carry out additional works as may be necessary to meet the requirements of the project. Specifications for specific projects should be sought from the company in writing.

Conditions Of Use and Disclaimer:

The information contained in this TDS is given in good faith based upon our current knowledge and does not imply warranty, express or implied. The information is provided, and the product is sold on the basis that the product is used for its intended purpose and is used in a proper workman-like manner in accordance with the instructions of the TDS in suitable and safe working conditions. Under no circumstances will the Company be liable for loss, consequential or otherwise, arising from the use of the product.

Health and Safety:

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).
Inhalation: Remove to fresh air. Get medical attention if symptoms persist
Skin Contact: wash with water and soap and rinse thoroughly.
Eye contact: Hold eyes open, flood with water for at least 15 minutes. Seek medical advice.
Ingestion: If swallowed, do not induce vomiting. Seek medical advice. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.
PPE for First Aiders: Wear gloves, safety glasses. Available information suggests that gloves made from should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.
Notes to physician: Treat symptomatically.

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